Summary

S.1 Purpose of and Need for the Proposed Project

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), in cooperation with the Sonoma County Transportation Authority (SCTA), propose to improve Highway 101 in Sonoma County between Old Redwood Highway in Petaluma and the Rohnert Park Expressway in Rohnert Park, a distance of 10.3 kilometers (km) (6.4 miles [mi]). FHWA is the Federal Lead Agency for the project under the National Environmental Policy Act (NEPA), and Caltrans is the State Lead Agency under the California Environmental Quality Act (CEQA).

The Highway 101 High Occupancy Vehicle (HOV) Lane Widening and Improvements Project: Old Redwood Highway, Petaluma, to Rohnert Park Expressway, Rohnert Park has a three-fold purpose, as follows:

- Complete one of the remaining portions of the planned continuous Highway 101 HOV system, as described and recommended in the Metropolitan Transportation Commission's (MTC) *2002 HOV Lane Master Plan Update*;
- Reduce traffic congestion for motorists and transit riders using the high-occupancy vehicle lanes; and
- Address existing roadway and operational deficiencies.

Caltrans and SCTA developed the proposed project to respond to identified current and future needs. Meeting the three-fold project purpose described above would address the following related needs in the transportation corridor:

- Encourage carpooling and use of alternative transportation modes, by offering HOV lanes that substantially reduce congestion and delay for HOV lane users;
- Address capacity constraints and increasing travel demand, by consolidating traffic into fewer vehicles; and
- Improve mainline traffic operations and on and off movements, by addressing existing roadway facilities and operational deficiencies.

The project location and vicinity are shown in Figures 1.1-1 and 1.1-2.

S.2 Project Alternatives

S.2.1 Alternatives Development and Screening

Alternatives developed and considered during this process included a new mixed-flow alternative, a transit/transportation systems management (TSM) alternative, and several variations of the HOV lane widening and improvements alternative. The mixed-flow alternative was withdrawn from further consideration because it was inconsistent with the MTC objective to complete the HOV Lane Master Plan system and encourage carpooling and transit use. The transit/TSM alternative was withdrawn

because increased bus service and ridership would be viable only if HOV lanes were available to provide a high level of traffic service. The variations on the HOV lane widening alternative that were withdrawn from further consideration generally had engineering constraints or operational deficiencies in comparison to the Build Alternative. The alternatives development and screening process is described in Section 2.1, Alternatives Development Process. Alternatives and variations considered and withdrawn from further consideration and the reasons why they were withdrawn are described in Section 2.3, Alternatives Considered and Withdrawn.

Two alternatives emerged from the alternatives development and screening process; they are described in the following paragraphs.

No-Build Alternative

The No-Build Alternative offers a basis of comparison with the Build Alternative in the opening year of 2010 and the future analysis year of 2030. This alternative would provide the same lane configuration as currently exists between Old Redwood Highway and Rohnert Park Expressway. The No-Build Alternative consists of currently planned and/or programmed improvements to the highway. This includes four other Highway 101 HOV lane widening projects in Sonoma County as follows:

- Highway 12 to Steele Lane and Steele Lane Interchange Improvements (Fully Funded)
- Rohnert Park Expressway to Santa Rosa Avenue, including Wilfred Avenue Interchange
- Steele Lane to Windsor River Road
- Marin-Sonoma Narrows[1]

These projects are described in Section S.3, Other Proposed Actions in Project Vicinity, and depicted in Figure 1.1-3.

Build Alternative

The proposed Highway 101 HOV Lane Widening Project would construct the following improvements within the project limits:

- One HOV lane in each direction in the median with standard 3.0-meter (m) (10-foot [ft]) inside shoulders and concrete median barrier, widening the freeway from four to six lanes;
- Standard 3.0-m (10-ft) wide outside shoulders by widening along the existing outside edges of the traveled way;
- Auxiliary lanes to facilitate weaving traffic movements between the State Route (SR) 116 (Gravenstein Highway) and Rohnert Park Expressway interchanges;
- Ramp geometry modifications at the Old Redwood Highway interchange;
- A 5-km (3.1-mi) northbound climbing lane from approximately 1.6 km (1.0 mi) north of Old Redwood Highway to West Sierra Avenue in addition to the HOV lane over the Cotati Grade to improve safety and operations and facilitate truck movements;

[1] Note that the Marin-Sonoma Narrows project is not anticipated to start construction until 2010; therefore, it is not included in the No-Build conditions in the opening year proposed project comparison. The Marin-Sonoma Narrows project is included in the No-Build conditions in the future analysis year (2030) proposed project comparison.

- Replacement of the Railroad Avenue undercrossing (this improvement would accommodate the planned future widening of Railroad Avenue by others);
- Modifications at the Highway 101/SR 116 interchange using one of two options: Option A: widening the existing Highway 101 structures over SR 116 and reconstructing only the northbound entrance ramp. Option B: raising the mainline profile at the interchange, reconstructing all ramps, and replacing the structure over SR 116;
- Widening the bridge structures at Willow Brook, West Sierra Avenue, Laguna de Santa Rosa, and Copeland Creek to accommodate the HOV widening;
- Lengthening the cattle pass undercrossing approximately 1.4 km (0.9 mi) south of Railroad Avenue;
- Modifications to the existing truck brake inspection area in the southbound direction at the top of Cotati Grade; and
- On-ramp improvements throughout the project to accommodate future ramp metering, provide California Highway Patrol (CHP) enforcement areas, and provide for HOV preferential lanes where minimum volume requirements are met.

Although the project would place infrastructure to provide for future ramp metering and HOV preferential treatments at interchange on-ramps, the decision to implement ramp metering and HOV preferential treatments will be made separately and not as part of this project. Ramp metering capabilities would be constructed as part of the current project to minimize disruption to the motoring public and facilitate future implementation. A more detailed description of the proposed project is presented in Section 2.2.3, Proposed Project (Build Alternative).

S.3 Other Proposed Actions in Project Vicinity

S.3.1 Highway 101 Widening and Improvements Projects

The proposed project is one of five Highway 101 HOV Lane projects that are currently proposed or under construction in Sonoma County. Together, these projects complete the Sonoma County portion of continuous Highway 101 HOV lanes from Mill Valley in Marin County to Windsor in Sonoma County. (See Figure 1.1-3, Highway 101 Widening and Improvements Project). The Marin County portion of this HOV system is complete from Mill Valley to SR 37 in Novato with the exception of the Marin 101 HOV Gap Closure Project that is currently under construction. Part of the Sonoma County portion of the HOV system, from Wilfred Avenue to Highway 12, has also been completed. The other four projects for Sonoma County are as follows:

Highway 12 to Steele Lane and Steele Lane Interchange Improvements

This project will add HOV lanes, ramp improvements, and auxiliary lanes on Highway 101 between Highway 12 and Steele Lane. Further improvements include new structures, replacement and improvement of existing structures, soundwall construction and relocation, and modification to the surrounding local street network to improve local circulation and access. The Final EA/EIR for this project was approved in December 2003. The mainline and interchange improvements are currently under construction. Project completion is estimated to occur in Fall 2008.

Rohnert Park Expressway to Santa Rosa Avenue, including Wilfred Avenue Interchange

This HOV Lane project would provide auxiliary lanes between the Rohnert Park Expressway and Wilfred Avenue Interchanges and construct ramp improvements. Local street networks would be modified to improve access and circulation. Environmental approval for this project is anticipated in 2006, with construction beginning in 2008.

Steele Lane to Windsor River Road

This HOV Lane Project would include construction of HOV lanes, auxiliary lanes, and ramp improvements, and reconfigure the Fulton Road−Airport Boulevard interchange complex. Environmental approval is anticipated in 2007, with construction beginning in 2009.

Marin-Sonoma Narrows

This HOV Lane Project would also upgrade the "Novato Narrows" section of Highway 101 to freeway, providing interchanges and frontage roads to replace at-grade intersections and driveways, construct HOV lanes, and make ramp improvements. Environmental approval is anticipated in 2008; phased construction would begin in 2011.

S.3.2 Sonoma-Marin Area Rail Transit (SMART)

This commuter-rail project would develop an existing publicly-owned rail corridor along the 101 corridor from Cloverdale to San Rafael, a distance of approximately 70 miles. The project would include 14 rail stations–nine in Sonoma County–and is sponsored by the Sonoma-Marin Area Rail Transit District (SMART). The District Board is made up of two Supervisors and three City Council Members from Sonoma and Marin counties and two representatives from the Golden Gate Bridge, Highway and Transportation District (GGBHTD). The environmental process for SMART Project began in November 2002; the environmental document was released in November 2005; and rail service was scheduled to begin by 2009.

S.4 Environmental Consequences and Mitigation Measures

Table S-1 summarizes the environmental impacts of the Build Alternative and identifies the proposed avoidance, minimization and/or mitigation measures for each impact. A detailed description of the impacts and mitigation measures for each impact category is presented in Chapter 3, Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures. Construction phase impacts are described in Section 3.16. Potentially significant impacts and level of significance after mitigation is applied are presented in Table 5.3-1.

Table S-1: Summary of Build Alternative Impacts and Proposed Mitigation Measures

Impact Category	Build Alternative Impacts	Proposed Avoidance, Compensation and Minimization Measures
Long-Term Impacts		
Traffic	Travel time savings of five to 12 minutes through the project area for a motorist who switches from mixed flow to HOV lane. HOV lanes would operate at level of service (LOS) C or better with speeds varying mostly between 92 kph (57 mph) and 103 kph (64 mph). 26 to 42 percent reduction in travel time compared to No-Build for mixed flow users and 31 to 39 percent reduction in travel time for HOV lane users. Reduction in congestion at Old Redwood Hwy–Petaluma Blvd. North and Railroad Ave. interchanges. Reduction of 31 million annual kilometers (19 million vehicle miles) of travel and 2 million vehicle hours of travel countywide, compared to no-build conditions, reflect improved travel conditions and less diversion to local streets.	None proposed.
Transit Services	Improved conditions for local and regional express bus service on Highway 101. Bus services would operate at free-flow speeds in the HOV lanes through project area. Reduced transit travel time and improved transit schedule reliability.	None proposed.
Pedestrian and Bicycle	Improved safety and accessibility for both bicyclists and pedestrians.	None proposed.
Parking	Estimated removal of 35 private parking spaces.	None proposed.
Land Use Changes	Conversion of 1.49 hectares (3.67 acres) of residential, industrial, commercial, and vacant land to transportation uses, under Highway 101/SR 116 Interchange Options A and B.	None proposed.
Consistency with Plans	Build Alternative is consistent with local plans, goals and policies.	None proposed.
Growth Inducement	Project would not induce unplanned growth.	None proposed.
Agricultural/ Farmland Impacts	Conversion of 0.44 hectares (1.08 acres) of farmland to transportation uses, including 0.08 ha (0.19 ac) of farmland under Williamson Act status.	Notification of Director of California Department of Conservation and Sonoma County Planning Department prior to acquisition of Williamson Land Act.
Displacements/ Relocations	Displacement and relocation of three single-family units and one business.	Compensation and relocation assistance consistent with state and federal laws.
Utilities	Conflicts with five utility lines.	Caltrans would be responsible for coordinating utility relocations with local providers to avoid disruptions in service.
Emergency Services	Project would not disrupt emergency services or increase response times.	None proposed.

Table S-1: Summary of Build Alternative Impacts and Proposed Mitigation Measures

Impact Category	Build Alternative Impacts	Proposed Avoidance, Compensation and Minimization Measures
Visual/Aesthetics	Visual changes from roadway widening and alignment shifts, construction of auxiliary lanes, reconstruction of structures and crossing roadways, changes in interchange configurations, retaining walls and soundwalls. 404 mature trees would be removed−about 387 of these would be redwoods. These redwood trees are considered important aesthetic resources because they were planted along Highway 101 to establish its character as the "Redwood Highway." (See also Table S-1: Trees and Other Mature Vegetation.)	Planting concepts and hardscape aesthetic design treatments consistent with Caltrans landscaping requirements would mitigate adverse impacts on overall visual quality. Replacement planting would reduce project effects on mature trees and landscaping. The SCTA and Caltrans would coordinate with the cities of Petaluma, Cotati, and Rohnert Park, and Sonoma County to identify feasible locations and species of trees and other plants to be installed. All disturbed areas will be re-vegetated according to Caltrans standards. Trees would be replaced at a minimum ratio of 1:1 (for 15 gallon containerized stock). Redwood tree clusters shall be reestablished along the corridor. A three-year plant establishment period would be implemented. Permits would be obtained prior to removal of any tree in County jurisdiction to ensure compliance with the Sonoma County Tree Protection Ordinance.
Archaeological Resources	No sites eligible for National Register of Historic Places (NRHP). Project impact area is not sensitive for buried archaeological resources.	None proposed.
Historic Architectural Resources	No structures eligible for NRHP or CRHR.	None proposed.
Hydrology/ Floodplains	Project is in 100-year flood hazard area. Closed medians and additional piers at bridge widenings will increase surface water elevations only negligibly.	Roadway design at Willow Brook needs to ensure no net increase in surface or backwater elevations. Roadside and cross-drainage need to accommodate roadway widening.
Water Quality/ Stormwater Runoff	Increases in impervious surface. Potential pollutants from area surface runoff, particularly from "first flush" runoff.	Best Management Practices (BMPs), e.g., erosion control measures and such structural treatments as detention basins and biofiltration swales.

Table S-1: Summary of Build Alternative Impacts and Proposed Mitigation Measures

Impact Category	Build Alternative Impacts	Proposed Avoidance, Compensation and Minimization Measures
Geology/Soils	Landsliding anticipated during rainy season.	Site specific analysis to accompany final design; it is anticipated that cut and fill slopes would be constructed with inclinations of 1:2 or flatter.
	Expansive soils with potential to damage structures or pavements.	Treatment actions such as the use of lime, cement, or fly ash, compaction control measures, moisture control measures, and/or removal and replacement with non-expansive backfill.
	Ground-shaking from one or more active faults. Potential for liquefaction includes risk of lateral spreading at Laguna de Santa Rosa creek channel.	All project structures would be designed to Maximum Credible Earthquake (MCE) design standards. Stone columns, sub-excavation, dynamic compaction, or de-watering methods would be implemented during construction. Site specific engineering recommendations to minimize impacts from lateral spreading would be incorporated into the final design plans and construction contract documents.
Hazardous Waste/Materials	No adverse impacts are anticipated.	BMPs would avoid impacts to surface waters or from unanticipated encounters with contaminated groundwater or other hazardous waste. Special precautions would be followed during renovation/demolition if sampling activities identify lead or asbestos in structures. Surface soils would be sampled for aerially-deposited lead and petroleum hydrocarbons; BMPs would avoid impacts from contaminated soils. A sampling and testing program would be conducted, and a detailed work plan would be prepared in accordance with Caltrans guidelines during the final design phase of the project.
Air Quality	No increase in emissions from vehicle operations. No carbon monoxide exceedences from congested segments. Complies with federal transportation conformity criteria (40 CFR Part 93).	None proposed.
Noise	Increase in ambient noise levels in the project vicinity.	Noise Abatement Measures would reduce noise levels.
Energy	Reduced vehicle energy use.	None proposed.
Wetlands and Other Waters of U.S.	0.194 ha (0.479 ac) of wetlands/other waters of the U.S. would be permanently filled.	Mitigation banking or on-site/in kind creation or enhancement of wetlands would ensure no net loss of wetlands and compensate for impacts to other waters.

Table S-1: Summary of Build Alternative Impacts and Proposed Mitigation Measures

Impact Category	Build Alternative Impacts	Proposed Avoidance, Compensation and Minimization Measures
Trees and Other Mature Vegetation	35 valley oaks would be removed; only five of these trees are mature. No conversion of oak woodlands would occur. (See Visual/Aesthetics for impacts to redwood trees and other ornamental vegetation.)	Mature oak trees would be replaced at a ratio to be determined with California Department of Fish and Game (CDFG). Compliance with Sonoma County Tree-Protection Ordinances prior to removal of any tree in County jurisdiction.
Threatened and Endangered Species	Preliminary surveys resulted in negative findings for all five special-status plants with potential to occur within the project area; it is unlikely that these species are present. Protocol-level presence/absence surveys for vernal pool and other special-status plant species are ongoing.	In the unlikely event special-status plant species are found, specific avoidance, minimization and/or mitigation measures will be established in consultation with the USFWS, USACE and CDFG. Plant surveys are recommended during the bloom period prior to construction to ensure no impacts to special-status plant species.
	Up to 0.0123 ha (0.0303 ac) of aquatic habitat at the Laguna de Santa Rosa that provides suitable habitat for Russian River tule perch, and up to 0.0199 ha (0.0499 ac) of aquatic habitat at the Laguna de Santa Rosa and Copeland Creek that provides suitable habitat for coho salmon and steelhead would be permanently affected.	Protective measures would be implemented to minimize harm to affected species. Revegetation and erosion control of the creeks and surrounding riparian areas will improve conditions for salmonids and perch. Riparian habitat will be restored at a mitigation ratio established in consultation with NOAA Fisheries, USFWS, and CDFG. Preconstruction surveys would be conducted so that in the unlikely event any western or northwestern pond turtles were present, they could be relocated prior to construction.
	Consultation with the USFWS to determine project-related impacts to California Tiger Salamander (CTS) habitat is ongoing. The project would permanently impact areas with potential to contain CTS. The project may affect, but is not likely to adversely affect the California tiger salamander.	Consultation with the USFWS to determine project-related compensatory mitigation is ongoing. Replacement would involve purchase of property rights for habitat conservation or the purchase of mitigation credits at a USFWS/CDFG–approved habitat mitigation bank.

Table S-1: Summary of Build Alternative Impacts and Proposed Mitigation Measures

Impact Category	Build Alternative Impacts	Proposed Avoidance, Compensation and Minimization Measures
Invasive Species	Weeds can be inadvertently introduced into the corridor during construction.	The following avoidance and minimization measures would be incorporated into the construction specifications: Using high pressure water blasting or steam cleaning, clean all earthmoving equipment before entering project area; avoid unnecessary disturbance of areas infested with noxious weeds; minimize soil disturbance; and if soil disturbance outside slope stake limits is necessary, keep disturbed area to a minimum, monitor and control disturbed areas and topsoil stockpiles for growth of weed species, and revegetate when disturbance is no longer necessary.
Construction Phase Impacts		
Transportation and Traffic	Possible disruptions to traffic by construction equipment and vehicles. Temporary night-time freeway lane, ramp, and local road closures or detours. Minor detours on the ramps and connecting streets during short-term closures for construction or safety reasons. Temporary night-time closures of SR 116 (under Option B only) and West Sierra Avenue and temporary day time closures of West Railroad Avenue for safety reasons. No substantial parking impacts.	A Transportation Management Plan (TMP) would be developed to provide advance notice and minimize inconvenience and delay to motorists and transportation and emergency service providers of construction activities and durations, detours, and access issues.
Utility Relocations	Short-term, limited interruptions of service may be required for utility relocations or if unexpected utilities are encountered.	Plans would be developed to schedule any required service interruptions in advance and to address unanticipated service interruptions.
Visual/Aesthetics	Construction activities would involve the use of a variety of construction equipment, stockpiling of soils and materials, and other visual signs of construction.	Construction contractor would be responsible to clear the work site of any trash or debris created by construction and to maintain the site in an orderly manner. In area where maximum protection of vegetation is desirable, clearing and grubbing would occur only within excavation and embankment slope limits. Existing vegetation outside of clearing and grubbing limits shall be protected from the contractor's operations, equipment and materials storage. Tree trimming by the contractor shall be limited to that required in order to provide a clear work area.

Table S-1: Summary of Build Alternative Impacts and Proposed Mitigation Measures

Impact Category	Build Alternative Impacts	Proposed Avoidance, Compensation and Minimization Measures
		High visibility protective fencing shall be placed around trees prior to the commencement of roadway construction. Existing trees to be removed shall be field marked by the Engineer and approved by the Engineer prior to removal. Wherever feasible, slope lines will be adjusted to avoid tree removal.
Farmlands	Two parcels of agricultural land would be temporarily affected: a temporary construction easement of approx. 0.11 ha (0.27 ac) required north of Willow Brook on the west side of Highway 101 and an easement of approx. 0.28 ha (0.68 ac) necessary to relocate gas line south of Pepper Road on the west side of Highway 101.	None proposed.
Emergency Services	Temporary road closures or detours could cause emergency service delays.	Coordination with emergency service providers and public information program would avoid emergency service delays by ensuring that all providers were aware well in advance of temporary road closures or detours.
Hydrology and Floodplain	Construction associated with waterway crossings could cause temporary changes in water volume or flow and increased siltation, sedimentation, erosion and water turbidity from bank-side activities and construction access.	A Stormwater Pollution Prevention Plan (SWPPP) would be prepared and will identify construction period BMPs to reduce impacts to surface waterways.
Water Quality	Construction activities could pollute surface water bodies or cause bank-side erosion.	SWPPP would identify construction period BMPs to avoid impacts to surface waters.
Hazardous Waste/Materials	Potential exists for the release of hazardous materials used for construction operations and for the release of lead and asbestos during construction due to disturbance of the adjacent soil and demolition of structures.	An approved Worker Health and Safety Plan (WH&SP) would address any hazardous materials handling during construction activities and the storage and disposal of any hazardous/materials used in construction operations.
Air Quality	Construction activities such as clearing, grubbing, grading and excavation would generate air pollutant emissions.	Construction Emissions Mitigation Plan would set forth measures, such as site-sweeping, site-watering, and limiting travel speeds on unpaved roads, to control emissions.
Noise	Temporary increase in ambient noise levels in the project vicinity.	Equipment noise control, administrative measures, and adherence to local noise ordinances would minimize effects.

Table S-1: Summary of Build Alternative Impacts and Proposed Mitigation Measures

Impact Category	Build Alternative Impacts	Proposed Avoidance, Compensation and Minimization Measures
Wetlands and Other Waters	Temporarily affects up to 0.120 ha (0.296 ac) of wetlands and 0.011 ha (0.026 ac) of other waters of the U.S. or 0.131 ha (0.322 ac) total wetlands/waters.	Avoidance measures including work windows and protective fencing would be implemented to minimize effects on wetlands. Wetland habitats that are temporarily lost or disturbed would be restored on-site to pre-construction conditions.
Special Status Species	Suitable habitat for Russian River tule perch occurs at the Laguna de Santa Rosa, and suitable habitat for coho salmon and steelhead occurs at the Laguna de Santa Rosa and Copeland Creek. This habitat could be disturbed during construction.	Buffer zones and work windows would minimize harm to fish species. Any listed fish in dewatered areas would be transported to free flowing water.
	Areas with potential to contain California Tiger Salamander (CTS) occur in the project area.	Buffer zones and work windows would minimize harm to CTS. Pre-construction surveys would be conducted for CTS 24 hours prior to construction and repeated following any lapse in construction activities of two weeks or more. A worker awareness program would be conducted to inform construction personnel of their responsibilities regarding CTS. Site monitoring by a qualified biologist during construction to remove any CTS found in the construction area.
	Habitat assessment and two years of negative findings protocol-level California red-legged frog (CRLF) surveys support the conclusion that CRLF are not present in the project vicinity.	Construction limited to October and November after draining wetland areas with survey to confirm absence of California red-legged frog. Spill prevention and action plan and buffer distances to prevent contamination of surface waters. Vegetation removal limited to the minimum necessary.
	No suitable habitat for western and northwestern pond turtles occurs within the project vicinity, however, suitable habitat occurs upstream and downstream of Highway 101, along Willow Brook, Laguna de Santa Rosa, and Copeland creeks. Direct impact to the species could occur if individual pond turtle(s) moved into the project vicinity during construction.	Preconstruction surveys would be conducted for western and northwestern pond turtle 24 hours prior to construction and repeated following any lapse in construction activities of two weeks or more. A worker awareness program would be conducted to inform construction personnel regarding their responsibilities toward these species. In the event individuals are encountered, construction activities would cease until corrective measures could be taken.

Table S-1: Summary of Build Alternative Impacts and Proposed Mitigation Measures

Impact Category	Build Alternative Impacts	Proposed Avoidance, Compensation and Minimization Measures
	Potential for construction phase effects to nesting raptors and other migratory birds.	Avoidance measures such as identification of active nesting stands, removal of nests during non-breeding seasons and avoidance of nest disturbance during construction through the use of buffer areas would reduce potential effects.
	Preliminary surveys identified no special-status plants in the project area. Protocol-level presence-absence surveys are ongoing.	An additional round of plant surveys would be conducted during the bloom period prior to construction.

S.5 Areas of Potential Controversy and Issues To Be Resolved

There are currently no controversies or outstanding issues to be resolved with regard to the proposed project.

S.6 Agency Permits and Approvals

Table S-2 lists the various agency permits and approvals that are anticipated for the Highway 101 HOV Lane Widening Project: Petaluma to Rohnert Park.

Table S-2: Anticipated Permits and Approvals Required

Agency	Approval or Permit
U.S. Army Corps of Engineers (USACE)	The following nationwide permits for impacts to jurisdictional wetlands or other waters of the U.S. under Section 404 of the Clean Water Act : • Nationwide permit 14 for linear transportation crossings and possibly, • Nationwide permit 33 for temporary construction, access, and dewatering.
U.S. Fish and Wildlife Service (USFWS)	Approval of Biological Assessment (BA) for California tiger salamander pursuant to Section 7 of the Federal Endangered Species Act (FESA); issue Biological Opinion (BO).
National Marine Fisheries Service (NOAA Fisheries)	Approval of BA for special-status fish species; coho salmon and steelhead, pursuant to Section 7 of the FESA; issue BO.

Table S-2: Anticipated Permits and Approvals Required

Agency	Approval or Permit
California Department of Fish and Game (CDFG)	Section 1602 Streambed Alteration Agreement for replacement of the 1919 bridge over Laguna de Santa Rosa, replacement of a portion of the box culvert at Copeland Creek, widening of the bridge at Willow Brook, and encroachment into riparian areas at Highway 101 / SR 116 interchange.
Regional Water Quality Control Board (RWQCB)	Water Quality Certification pursuant to Section 401 of the Clean Water Act; National Pollutant Discharge Elimination System or Countywide Non-point Source Permit for discharge of stormwater into surface waterways under the Clean Water Act; includes contractor's preparation of a Stormwater Pollution Prevention Plan (SWPPP).
California Department of Toxic Substances Control (California Environmental Protection Agency− CalEPA)	Approval of voluntary clean-up agreement, transportation plan, soil management plan, and health and safety plan for construction operations. May request application of aerially deposited lead variance, depending on soil tests to be performed prior to construction. May require DTSC approval for disposal of materials from old bridges and other highway or utility structures or buildings.
California Public Utilities Commission (CPUC)	Approval of Pacific Gas & Electric Company Notice of Construction for relocation of power lines pursuant to GO 131-D.
Sonoma County Permit and Resource Management Department	Encroachment permit for any widening on County lands. Grading permit for any widening on private lands. County 1108 permit for work within a streambed or waterway (to be obtained after 1602 is signed). The following County ordinances apply to trees in County jurisdiction: Ordinance No. 4044 requires replacement measures for removal of oaks, madrone, redwood, California bay and other designated trees having trunk diameter of nine inches or more measured 4.5 feet above grade. Ordinance No. 4991 defines valley oak sizes and mitigation options for removal of valley oaks; written notice must be filed at least five days prior to removal. Sonoma County Heritage Tree Ordinance No. 3651 requires approval and mitigation for removal of designated heritage trees.

S.7 Environmental Commitments

Environmental commitments for the proposed project are described in the Avoidance, Minimization and/or Mitigation sections in their respective environmental categories in this EA/EIR. Table S-3 summarizes these environmental commitments and references them by EA/EIR section.

Table S-3: Summary of Proposed Environmental Commitments

Environmental Category	EA/EIR Section	Environmental Commitments
Displacements/ Relocations	3.4.3.4	Caltrans will observe the rights and services provided under Public Law 91-646, Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 in accordance with its own relocation assistance policies. It is Caltrans' policy that persons displaced as a result of highway programs shall receive fair and humane treatment and shall not suffer unnecessarily as a result of programs designed for the benefit of the public. A summary of relocation benefits is included in Appendix D of this EA/EIR.
Environmental Justice	3.4.4.4.	Caltrans will abate the long-term noise effects of the project with soundwalls consistent with FHWA noise abatement criteria. Relocation assistance will be provided to residential and business owners in accordance with the Uniform Relocation Assistance Act. Construction phase impacts will be minimized with Best Management Practices (BMPs) to control noise and fugitive dust. Detour routes will be planned in coordination with Caltrans and the traffic departments of Petaluma, Cotati and Rohnert Park and will be noticed to emergency service providers, transit operators, and Highway 101 users in advance. These measures will serve to ensure that there will be no disproportionate adverse effects on minority and low-income residents.
Utilities	3.5.3	Design, construction, and inspection of utilities relocated for the project will be done in accordance with Caltrans requirements. Where feasible, relocations will be undertaken in advance of project construction. Caltrans will coordinate with the affected service provider in each instance to ensure that work is in accordance with the appropriate requirements and criteria. In addition, coordination with the utility providers will be initiated during the preliminary engineering phase of the project and will continue through final design and construction. Coordination efforts will plan utility re routes, identify potential conflicts, ensure that construction of the proposed project minimizes disruption to utility operations, and formulate strategies for overcoming problems that may arise.
Visual/Aesthetics	3.6.4	It is Caltrans policy to replace vegetation damaged or removed due to highway improvement projects. A landscaping replacement plan will be implemented and replacement trees planted. The landscape replacement plan will be developed by Caltrans with input from Sonoma County and the cities of Petaluma, Cotati, and Rohnert Park to identify appropriate and feasible locations and species of trees for replacement within or near the project limits. Such replacement locations must meet safety requirements for sight distances, in addition to providing favorable conditions for tree establishment and survival. The following mitigation measures are proposed to reduce visual effects of the Build Alternative. • Trees will be replaced at a ratio of 1:1 (for 15 gallon containerized stock). This ratio and/or size may be increased based on consultation between Caltrans and the other agencies. • Species, size, precise number, location, and spacing of replacement trees will ultimately be determined by Caltrans Office of Landscape Architecture at a future phase of the project. • The landscape replacement plan will include landscaping and design elements, such as aesthetic treatments on new retaining walls and soundwalls. Where feasible, vines will be planted and allowed to grow on soundwalls to help visually integrate them with the overall landscape and to reduce the incidence of graffiti.

Table S-3: Summary of Proposed Environmental Commitments

Environmental Category	EA/EIR Section	Environmental Commitments
		• A three-year plant establishment period will be implemented. • All disturbed areas will be re-vegetated according to Caltrans standards. • Black vinyl clad chain link fence shall be installed on top of the proposed concrete barrier left of ML Line Station 99+20 to 109+00. A 12-18-inch wide plantable area will be provided between the concrete barrier and the frontage road to plant vines along the frontage road side of the barrier. • Design exceptions will be prepared to: 1. Reduce the width of the standard "catch line" to minimize the loss of existing desirable vegetation. 2. Install guardrail around selected existing redwood tree groupings to retain the corridor image of being the "Redwood Highway." • Trees shall be planted within cut/fill slope transitional areas to break up the appearance of engineered slope planes. • Slope rounding will be provided on cuts and fills for a more natural appearance. • Aesthetic surface treatments on structures will be consistent with the corridor-wide master plan (to be developed). Redwood tree clusters will be reestablished along the corridor. Permits will be obtained prior to removal of any tree in County jurisdiction to ensure compliance with the Sonoma County Tree Protection Ordinance.
	3.16.6	The construction contractor will be responsible to clear the work site of any trash or debris created by construction workers or activities and to maintain the site in an orderly manner. Avoidance and minimization measures to protect mature trees and other vegetation are listed below. • In areas where maximum protection of vegetation is desirable, clearing and grubbing is to occur only within excavation and embankment slope limits. • Existing vegetation outside of clearing and grubbing limits shall be protected from the contractor's operations, equipment and materials storage. • Tree trimming by the contractor shall be limited to that required in order to provide a clear work area. • High visibility protective fencing shall be placed around trees prior to the commencement of roadway construction. • Existing trees to be removed shall be field marked by the Engineer and approved by the Engineer prior to removal. • Wherever feasible, slope lines will be adjusted to avoid tree removal.
Archaeological Resources	3.7.4.1, 3.16.7.1	In the unlikely event that previously unidentified buried cultural materials are unearthed during construction of the proposed project, Caltrans and FHWA will comply with 36 CFR §800.11 regarding late discoveries.

Table S-3: Summary of Proposed Environmental Commitments

Environmental Category	EA/EIR Section	Environmental Commitments
Hydrology/ Floodplains	3.8.4	The roadside drainage will be modified to accommodate the widened highway facility and the 100-year flood with the exception of allowing the floodwaters to continue to overtop the highway between Willow Brook and the Old Redwood Highway-Petaluma Boulevard Interchange. Culverts will be repaired or upgraded as necessary, and the new drainage facilities coordinated with the stormwater BMPs to provide a consistent and effective drainage system. The BMPs that will become an integral component of the drainage system will include open swales off of the outside shoulders that will be modified to accommodate the widened roadway run-off and detention basins. The highway profile and current roadway elevations will be maintained from the Old Redwood Highway-Petaluma Boulevard North Interchange to a point at least 1400 m (4600 ft) north (actual location to be determined based upon detailed study during the design phase), and the guardrail barrier in the median will be relocated or replaced in-kind. These measures will allow the 100-year floodwaters to continue to overtop the highway in sheet flow towards the Petaluma River as they currently do under 100-year floods.
	3.16.8.2	A Stormwater Pollution Prevention Plan (SWPPP) will be prepared and implemented, in accordance with Section 402 of the federal Clean Water Act, as amended. As part of the requirements for the SWPPP, best management practices (BMPs) will be identified to be used during construction to minimize the effect of construction activities on waterways. Recommended construction-period BMPs include: • Scheduling construction during the non-rainy season. • Monitoring the forecast for rainfall; adjusting the construction schedule to allow implementation of soil stabilization and sediment treatment controls before the onset of rain. • For stream crossings, minimizing disturbance by selecting the narrowest crossing, avoiding steep and unstable banks or highly erodible soils, selecting equipment that reduces the amount of pressure exerted on the ground (e.g. using wide or high flotation tires, dual tires, tracked machines, etc), and using overhead or aerial access for transporting equipment across streams whenever possible. • Limiting temporary stream crossings to culverts or bridges if the stream crossing remains during the rainy season. • For pumped diversion of in-stream flows, continuously monitoring pumps and incorporating a standby pump. Employing velocity dissipation at the outlet as necessary to control erosion. • Sizing diversion channels and/or culverts to accommodate a minimum 10-year storm event if placed within the channel during the rainy season. • Isolating work areas within the waterway from the flow using sheet piling, k-rails, rip rap berms, or other methods of isolation. • Keeping equipment used in a waterway leak-free. • Stabilizing waterway embankments where necessary using rock slope protection, netting, erosion control blankets, gravel bag berms, fiber rolls, etc. • Protecting all drainage systems (culvert entrances, inlets, etc) from debris and sediment laden waters. • If in-channel disturbance of fines (sand and silt sized particles) occurs, washing the fines (using water from a water truck or hydrant) back into the interstitial spaces of the existing gravel and cobbles.

Table S-3: Summary of Proposed Environmental Commitments

Environmental Category	EA/EIR Section	Environmental Commitments
Water Quality/ Stormwater Runoff	3.9.4	Treatment BMPs that will be implemented for the project include detention basins, biofiltration swales along the outside shoulders of the highway and flared-end sections and rock slope protection at drainage outlets. Additionally, this project is located in a Municipal Separate Sewer System (MS4); stenciling of drainage inlets will be required. Typical permanent erosion control measures that will be used include the application of soil stabilizers such as hydroseeding, netting, erosion control mats, rock slope protection, velocity dissipation devices, flared-end sections for culverts and others.
	3.16.9	The contractor will prepare a SWPPP to identify construction-period BMPs to reduce water quality impacts. The SWPPP will emphasize: 1) standard temporary erosion control measures to reduce sedimentation and turbidity of surface run-off from disturbed areas, 2) personnel training, 3) scheduling and implementation of BMPs throughout the various construction phases and during various seasons, 4) identification of BMPs for non-stormwater discharge such as fuel spills, and 5) mitigation and monitoring throughout the construction period. The plan will be submitted to Caltrans and the Regional Water Quality Control Board. During construction, erosion control procedures will be used such as the placement of mulch on all disturbed areas, fiber rolls along slopes, silt fences at the boundaries of the construction site, stabilized construction entrances and exits equipped with tire washing capability, and check dams placed strategically to reduce flow velocity and to filter flows in defined drainage-ways. Due to the project's proximity to the Laguna Santa Rosa Creek, the only sediment impaired 303(d) listed body of water that crosses the alignment, a sampling analysis program for sediment will be implemented during construction to prevent sediment from flowing into this water body during construction activities. Construction over and adjacent to waterways will include special construction BMPs to minimize the debris deposition into those waterways, as follows: • Demolition and construction over and adjacent to waterways will be accomplished using non-shattering methods that would not scatter debris (for example, wrecking balls will not be acceptable). • Platforms will be placed under/adjacent to bridges over waterways to collect debris. • Watertight curbs or toe-boards on bridges over waterways will be provided to contain spills and prevent materials, tools, and debris from falling from the bridge. • Materials adjacent to waterways will be secured to prevent discharges via wind. • Attachments will be placed on construction equipment such as backhoes to catch debris from small demolition operations. • Accumulated debris and waste from demolition will be stockpiled away from the waterway. • Work areas within the waterway will be isolated from the flow using sheet piling, k-rails, rip rap berms, or other methods. • Drip pans will be used during equipment operation, maintenance, cleaning, fueling and storage for spill prevention. Drip pans will be placed under all vehicles and equipment placed on bridges when expected to be idle for more than 1 hour. • Equipment will be kept in a leak-free waterway. • Waterway embankments will be stabilized, using rock slope protection, netting, erosion control blankets, gravel bag berms, fiber rolls, and other stabilization methods, as necessary. • All drainage systems (such as culvert entrances and inlets) will be protected from debris and sediment laden waters.

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Environmental Category	EA/EIR Section	Environmental Commitments
		• Logs will be kept of all storm and spill events.
Geology/Soils	3.10.3	To avoid, minimize, and/or mitigate seismic hazards in the proximity of the project, site specific investigations, seismic hazard engineering analysis, and engineering recommendations for retaining walls, landslide prevention, expansive soil treatment, cuts and fills, and bridge foundation elements will be conducted during final design using Guidelines for Geotechnical Foundation Investigations and Reports (Caltrans, 2002). Specifications for construction will conform to the Standard Specifications (Caltrans, 1999). Site specific engineering recommendations to minimize impacts due to landsliding will be defined based upon field testing and implemented during the final design phase and construction process. For slope stability, it is anticipated that cut and fill slopes will be constructed with inclinations of a vertical to horizontal ratio of 1:2 or flatter. Treatment actions for potential settlement or shrink-swell potential of soils include the use of lime, cement, fly ash, compaction control measures, moisture control measures, and/or removal and replacement with non-expansive backfill. Implementation of these actions or a combination of these actions will be explored during the final design and construction process when site-specific subsurface investigations, borings, and field mapping will be performed. Structures associated with this project will be designed to meet the Maximum Credible Earthquake (MCE) standards, as established by the Caltrans Office of Earthquake Engineering. The MCE for this project is a magnitude 7.0 earthquake on the controlling Healdsburg/Rodgers Creek fault. Site specific engineering recommendations to minimize impacts from liquefaction, fault rupture, and lateral spreading will be incorporated into the final design plans and construction contract documents.
Hazardous Waste/Materials	3.11.3	The construction contractor(s) will be required to prepare and implement a Worker Health and Safety Plan (WH&SP) to be approved by Caltrans and the California Department of Toxic Substances Control [DTSC] prior to onset of construction activities. The construction contractor(s) will be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) to be approved by Caltrans prior to the onset of construction activities. Any contaminated groundwater that is encountered during construction will be handled in accordance with the water quality provisions outlined in Section 3.9 of this document. In the event that a previously undocumented hazardous waste site or underground storage tank is uncovered during construction of the proposed project, Caltrans will consult with the appropriate federal and state regulatory agencies to determine what action, if any, is appropriate. Contract special provisions will be written and construction plans prepared so that any contaminated soil excavated during construction will be handled and disposed of in accordance with applicable federal and state laws, regulations, rules, and policies. Sampling activities will be conducted in locations where lead-based paint or asbestos-containing materials are anticipated (including the Railroad and West Sierra Avenue Undercrossings, Highway 101/116 Separation, and Laguna De Santa Rosa Bridge) to identify whether potential hazards exist and whether special precautions are necessary during bridge/overcrossing renovation and or/demolition. During the course of demolition or renovation activities, construction contractors and/or Caltrans will follow regulations requiring the abatement of lead-based paint and asbestos-containing materials to prevent exposure to nearby residents and workers. Prior to any demolition work or upgrading or reconstruction of existing overpasses, on- or off-ramps, an asbestos-containing materials (ACM) survey will be conducted for these structures. In addition, any other structure (e.g. retaining or sound walls)

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Environmental Category	**EA/EIR Section**	**Environmental Commitments**
		requiring demolition will be tested for ACM prior to demolition. The ACM survey will be performed by an inspector who is Asbestos Hazardous Emergency Response Act (AHERA)-certified under Toxic Substances Control Act (TSCA) Title II and California
	3.16.10.2	Occupational Safety and Health Administration (Cal OSHA)-certified under Section 1529 of the California Code of Regulations. Prior to demolition, a notification along with the results of the ACM survey will be submitted to the Bay Area Air Quality Management District as part of the permitting process. Sampling activities will be conducted in locations where elevated concentrations of aerially deposited lead (ADL) are anticipated or petroleum hydrocarbon-contaminated soil and groundwater could be encountered to identify whether potential hazards exist and whether special handling of soil is required. Short-term impacts of soil excavation will be mitigated through implementation of BMPs, which may include preparation of a soils management plan (SMP) or section of the WH&SP to prevent exposure of workers to potentially hazardous excavated soils and to comply with applicable waste handling and disposal regulations if offsite disposal of soil/rock is necessary. If ADL or petroleum hydrocarbon-contaminated soil is present, a variance for re-use of soil can be obtained through the DTSC if contamination meets the extractable and total lead/petroleum hydrocarbon thresholds. The Regional Water Quality Control Board (RWQCB) will also be notified, and provisions for the re-use and storage of ADL and petroleum hydrocarbon contaminated soil will be addressed in the SWPPP prepared by the contractor for the project. It is recommended that surface samples of soil be collected and analyzed for total lead. Any sample exceeding 1,000 milligrams/kilogram (mg/kg) should be tested for Toxicity Characteristic Leaching Procedure (TCLP). Any soil containing 5 milligrams per liter (mg/l) or more of lead is considered a RCRA hazardous waste for disposal purposes. If Caltrans were to use the affected soils on site, special provisions subject to the ADL variance provided to Caltrans by the DTSC should be used. This variance includes testing of the soils exceeding the hazardous waste thresholds via a WET-DI procedure, a waste extraction procedure using de-ionized water as a leaching agent. If the SCTA were to be responsible for construction of the proposed project, it will consult with DTSC and the San Francisco RWQCB regarding the applicability of the variance and management of lead-impacted soil. A detailed work plan and a sampling and testing program will be prepared in accordance with Caltrans guidelines during the design phase of the project. The approved WH&SP will address any hazardous materials handling during construction activities pursuant to Title 8 of the California Code of Regulations regarding workers' safety and the use of protective equipment during excavation, moving, or handling of contaminated soil or water. The WH&SP will establish measures to avoid or minimize potential worker and public exposure to airborne contaminant migration by incorporating dust suppression techniques in construction procedures. The plan also will address avoidance and minimization of worker and environmental exposure to contaminant migration via surface water run-off pathways by implementation of comprehensive measures to control drainage from excavations. In addition, the WH&SP will address handling, storage, and disposal of any hazardous materials used in the construction process. Since construction workers are in the closest proximity to potential hazards, a plan that avoids impacts to construction workers would provide adequate protection for surrounding residents, workers, and the traveling public.

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Environmental Category	EA/EIR Section	Environmental Commitments
Noise	3.13.4	Recommended barrier (soundwall) heights and locations for noise abatement are shown on Figure A (Sheets 1 through 15) in Appendix A and discussed in detail in Section 3.13.4. A final decision concerning noise barriers will be made upon completion of the project design and public involvement processes.
	3.16.12.3	The following control measures will be implemented to minimize noise disturbances at sensitive receptors during construction: Equipment Noise Control • Ensure that all equipment items have the manufacturers' recommended noise abatement measures, such as mufflers, engine enclosures, and engine vibration isolators intact and operational. All construction equipment would be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers and shrouding, etc.) (Caltrans, 1999). • Turn off idling equipment. Administrative Measures • Implement a construction noise monitoring program to limit the impacts. • Plan noisier operations during times of least sensitivity for receptors. • Keep noise levels relatively uniform and avoid impulsive noises. • Maintain good public relations with the community to minimize objections to unavoidable construction noise. Provide frequent activity updates of all construction activities.
Natural Communities	3.15.3	Retaining walls and side slopes steeper than standard will be constructed at several locations to minimize right-of-way takes and natural community impacts.
	3.16.13.2	Avoidance measures will be implemented to minimize construction-phase effects on willow riparian scrub. Measures will include identifying, marking, and protecting trees with protective orange fencing to avoid disturbance or accidental intrusion by workers or equipment.
Wetlands and Other Waters of U.S.	3.15.2.4	Retaining walls and side slopes steeper than standard will be constructed at several locations to minimize right-of-way takes and impacts to wetlands and other waters of the U.S. Compensation requirements for impacts to wetlands and other waters of the U.S. will be determined through consultation with the USACE and Regional Water Quality Control Board, which will establish the compensation ratio and other measures to be implemented, based on their review of this Environmental Assessment/Environmental Impact Report, the Wetlands Delineation Report, and the Natural Environment Study/Biological Assessment (NES/BA). Compensation measures will be identified for both permanent and temporary (construction phase) impacts of the project to ensure no net loss of wetlands. It is recommended that Caltrans and its partners purchase wetland creation/enhancement credits at an USACE-approved mitigation bank. Alternatively, Caltrans and FHWA will consult with the USACE to identify on-site locations to create or enhance seasonal freshwater marsh and wetlands at ratios to ensure no net loss. In this case, Caltrans and FHWA would develop a wetlands compensation plan that will describe the conceptual wetlands creation/enhancement approach, identify the site and preferred plants, and establish performance criteria. Either of these measures will compensate for project effects to wetlands. The USACE's review will be completed and the final compensation measures identified before the Finding of No Significant Impact/Final Environmental Impact Report is approved.

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Environmental Category	EA/EIR Section	Environmental Commitments
	3.16.13.2	The following avoidance measures will be included in the project specifications and special provisions: • Construction within wetlands and drainages will be avoided during the rainy season to prevent excessive siltation and sedimentation; • Materials and fluids generated by construction activities will be placed at least 30 meters (100 feet) from wetland areas or drainages until they could be disposed of in accordance with applicable regulations; and • All natural communities and wetland areas located outside of the construction zone that could be affected by construction activities will be temporarily fenced off and designated as Environmentally Sensitive Areas (ESAs) to prevent accidental intrusion by workers and equipment. • Wetland habitats that are temporarily lost or disturbed due to project construction will be restored on-site to preconstruction conditions. Revegetation would be with native species such as cattails (*Typha* spp.), *Juncus* spp., or *Cyperus* spp. Any revegetation would be carried out by a contractor qualified in habitat restoration.
Threatened and Endangered Species	3.15.3.4	Retaining walls and side slopes steeper than standard have been incorporated at several locations to minimize right-of-way takes and impacts to natural communities that provide habitat for special-status plant and wildlife species. Protocol-level surveys for listed vernal pool plant species are ongoing to complete the USACE HQE process for projects within the Santa Rosa Plain. Pre-construction surveys are also recommended during the bloom period for special-status plants. In the unlikely event special-status plant species are found, mitigation will be discussed with the USFWS and CDFG and specific avoidance, minimization and/or mitigation measures will be established in accordance with the Santa Rosa Plain Conservation Strategy. Types of mitigation may include marking and protecting plants with orange safety fencing until seed-set later in the flowering season and/or collecting, storing, and growing seeds in a regional preserve or center for plant conservation following California Native Plant Society (CNPS) and CDFG plant protection guidelines. <u>Russian River Tule Perch and Pacific Salmon and Trout: Coho Salmon and Steelhead</u>: Modifications at the Laguna de Santa Rosa and Copeland Creek crossings will be developed in consultation with NOAA Fisheries, and protective measures will be implemented to minimize incidental take of the species and to avoid jeopardizing the continued existence of the species. Revegetation, including erosion control, seeding and planting, will occur to maintain water clarity and nutrients. Revegetation of the creek and surrounding riparian areas will increase cover for Russian River tule perch, coho salmon, and steelhead, prevent erosion in streams, and provide a source of nutrients for the fish. Modifications and revegetation at the Laguna de Santa Rosa and Copeland Creek will be consistent with the CDFG's California Salmonid Stream Habitat Restoration Manual. Riparian habitat will be restored at a mitigation ratio to be established in consultation with NOAA Fisheries, USFWS and CDFG. <u>California Tiger Salamander</u>: Consultation with the USFWS to determine appropriate compensation measures for impacts to California tiger salamander areas in accordance with the Santa Rosa Plain Conservation Strategy is ongoing. A multi-agency cooperative endeavor including FHWA, Caltrans, SCTA and a local public agency such as the Sonoma County Agricultural Preservation and Open Space District that would assume responsibility for maintenance of the habitat conservation easement appears the most promising, subject to consultation with the USFWS and CDFG. Alternatively, SCTA will purchase credits at a USFWS/CDFG-approved habitat conservation bank. Final selection of compensatory measures for the California tiger salamander will be determined through coordination with the USFWS during the formal Section 7 consultation process.

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Environmental Category	EA/EIR Section	Environmental Commitments
	3.16.3.2	Pacific Salmon and Trout: Coho Salmon and Steelhead: The construction contractor shall adopt BMPs that NOAA Fisheries, USFWS, and CDFG believe would help avoid jeopardizing the continued existence of the species, including: • Loss of vegetation and delivery of sediments to streams will be minimized through the creation of buffer zones where the project crosses through riparian areas. Construction activities, such as staging, stockpiling of materials or equipment, and equipment movement will be limited to locations outside of riparian areas, where possible. Riparian areas will be identified as ESAs and will be clearly marked with fencing. • Construction and grading that would affect Copeland Creek, Laguna de Santa Rosa and drainages, or upland areas that might erode into the creek or drainages, would be restricted to the period from June 15 to October 15. • An SWPPP will be implemented to minimize storm water and groundwater pollution caused by construction activities. The SWPPP will outline erosion control measures and other BMPs to control and prevent to the maximum extent practicable the discharge of pollutants to surface and water and groundwater. • Laguna de Santa Rosa and Copeland Creek will be temporarily piped through the construction area between June 15 and October 15. • All coho salmon and steelhead present in dewatered areas will be captured and transported to free flowing water by a NOAA Fisheries approved biologist. Russian River Tule Perch: Avoidance and minimization measures, as described above for coho salmon and steelhead, would be sufficient to protect Russian River tule perch. California Tiger Salamander. Avoidance and minimization efforts would be implemented to avoid construction-related impacts to CTS, as described below. • Best management practices and procedures would be implemented during all phases of construction. • Construction would be limited to the dry season (June 1st−October 15th) when drainages and wetlands would be either dry or at their lowest water level to eliminate the potential for take of breeding/migrating individuals. Vegetation clearing would be confined to the minimal area necessary to facilitate construction activities. California tiger salamander habitat that can be avoided during construction would be flagged and designated as ESA. These areas would be avoided by all construction personnel. • Twenty-four hours prior to construction activities, the project areas would be surveyed for California tiger salamander. Survey of the project area would be repeated if a lapse in construction activity of two weeks or greater should occur. If a California tiger salamander is encountered during construction, all activities shall cease until appropriate corrective measures have been completed or it has been determined that the salamander will not be harmed. • A Worker Environmental Awareness Program would be conducted to provide construction personnel with information on their responsibilities with regard to the federally listed California tiger salamander. • The construction site would be monitored by a qualified biologist during all phases of construction to remove any California tiger salamander found in the construction area. If individual California tiger salamander are encountered, they would be moved immediately to a site that is a minimum of 100 m (330 ft) from the construction area boundary. The relocation site would be determined prior to commencement of construction activities.

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Environmental Category	EA/EIR Section	Environmental Commitments
		California Red-legged Frog. To prevent impacts to California red-legged frogs that may enter project drainages, the following actions consistent with construction near surface waters shall be implemented: • Wetland areas that cannot be avoided shall be drained between mid-August and late-September. Construction activities shall occur during October through November after draining the wetland or following a survey by a qualified biologist to confirm that tadpoles are not present. The conduct of construction activities outside this period shall be subject to review and approval by the USFWS. • All fueling and maintenance of vehicles and other equipment shall occur at least 20 m (66 ft) from any riparian habitat or water body. SCTA shall ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, the USFWS shall ensure that SCTA has prepared a spill prevention and action plan to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. • During construction, native riparian and upland vegetation on the upper banks of wetlands and creeks shall remain in place to provide cover for California red-legged frogs except in areas where the equipment would require access to the wetlands and creeks during sediment removal activities. To the extent feasible, sediment removal shall occur in the bottom of the creeks, below the high water mark. • The size of staging areas and the total area of the activity shall be limited to the minimum necessary to achieve the project goal. Routes and boundaries shall be clearly marked. • To control erosion during and after project implementation, the applicant shall implement BMPs as identified by the RWQCB. Western and Northwestern Pond Turtle: Avoidance and minimization efforts, including preconstruction surveys, will be implemented to avoid construction-related impacts to western and northwestern pond turtle, as described below. • BMPs would be implemented during all phases of construction. • The construction contractor shall furnish a biologist qualified to survey for western and northwestern pond turtles. • Twenty-four hours prior to construction activities, the project areas will be surveyed by the qualified biologist for western and northwestern pond turtle. Surveys of the project area would be repeated if a lapse in construction activity of two weeks or greater should occur. • A Worker Environmental Awareness Program will be conducted to provide construction personnel with information on their responsibilities with regard to the western and northwestern pond turtle. • A permitted biological monitor shall be on-call and capable of responding to the work site within one hour. • If individual western or northwestern pond turtles are encountered, they will be moved immediately to a site that is a minimum of 100 m (330 ft) from the construction area boundary. The relocation site would be determined prior to commencement of construction activities. • If western or northwestern pond turtles are encountered during construction, all activities shall cease until appropriate corrective measures have been completed or it has been determined that the species will not be harmed.

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Environmental Category	EA/EIR Section	Environmental Commitments
		White-tailed Kite, Loggerhead Shrike and Other Migratory Birds: • If project activities cannot avoid the bird breeding season (generally February 1 – August 31), focused pre-construction breeding surveys will be conducted for white-tailed kite and loggerhead shrike, as well as other species protected under the MBTA. • Surveys shall be conducted in all areas that may provide suitable nesting habitat by a suitably qualified ornithologist to be furnished by the contractor. • Surveys would include areas within 1,640 m (500 ft) of the construction area that provide potential nesting habitat (access permitting). • No more than two weeks before construction, a survey for nesting would be conducted by a qualified ornithologist. • If nesting birds are identified, occupied nests will not be disturbed during the nesting season (February 1 through August 31 for raptors; March 1 through August 31 for other species), including a minimum 820-m (250-ft) buffer zone around any occupied nest, 492 m (150 ft) for other non-special status passerine birds, and up to 1,640 m (500 ft) for raptors. Construction-related activities will not be allowed within the buffer zone until the young have fledged. • For activities that occur outside the bird breeding season (generally September 1 through February 28), such surveys will not be required.
Trees and Other Mature Vegetation	3.15.4.4	Retaining walls and side slopes steeper than standard will be constructed at several locations to minimize right-of-way and impacts to mature trees. Mature oak trees will be replaced within the project right-of-way or at a nearby location at a ratio to be determined in consultation with the CDFG. Caltrans and their contractors will comply with Federal, State and Sonoma County quarantine regulations related to Sudden Oak Death and the disposal and transport of vegetation debris. Caltrans will comply with the conditions established in the Sonoma County Tree Protection and Heritage Tree Ordinances prior to removing any trees outside of the State right-of-way and within County jurisdiction.
Invasive Species	3.15.5.4	To prevent or minimize any introduction or spread of invasive species in the project area, the following methods will be incorporated into the construction specifications: • Use high pressure water blasting or steam cleaning methods; clean all earthmoving equipment of dirt, mud, and seed residue before initially entering the project area. • Avoid any unnecessary disturbance of project areas known to be infested with noxious weeds. • Minimize soil disturbance within right-of-way. • If soil disturbance outside slope stake limits is necessary, keep disturbed area to a minimum, monitor and control disturbed areas and topsoil stockpiles for growth of weed species subject to control, and re-vegetate in accordance with the landscape plans or other project specifications when disturbance is no longer necessary. • Control weeds with pre-emergent, selective and nonselective herbicides. Inspect and monitor erosion control and other disturbed soils throughout construction. Inspect and monitor landscaping/seeding during the vegetation re-establishment period. • Include payment for equipment cleaning under bid item for mobilization. • Construction contractor shall comply with Federal, State and Sonoma County quarantine regulations related to Sudden Oak Death (SOD) and the disposal and transport of vegetation debris. To prevent or minimize any introduction or spread of invasive animal species in the project area, the construction specifications will require that the contractor adopt

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Environmental Category	EA/EIR Section	Environmental Commitments
		sanitation and exclusion methods for preventing spread of invasive species, such as the following: • Restrict use of contaminated soils and fills, • Require pest-free forage and mulch and weed-free sod, • Wash construction equipment.
Construction Stages, Schedule, and Work Hours	3.16.1	Each construction stage will maintain two lanes of traffic in each direction on Highway 101. Bicycle and pedestrian access will be maintained throughout the construction period, except during critical construction operations requiring short-term closures for certain elements or for safety reasons. Lane closures will be made only during non-peak travel periods. All closures will require advance approval by the Resident Engineer and will be allowed only during periods of low traffic. Such periods will be defined through traffic studies made during the design phase in support of the construction project. A Transportation Management Plan (TMP) will be developed in conjunction with the local jurisdictions. The TMP will provide advance notice to motorists and transportation and emergency service providers of information on construction activities and durations, detours, and access issues during each stage of construction. The TMP will identify services to facilitate safe implementation, such as increased California Highway Patrol presence during critical construction operations, and increased Freeway Service Patrol during peak travel periods. It will also include a public information program to provide motorists with advance notice of information related to the construction activities and durations, temporary closures and detours. Some nighttime work will be necessary to permit temporary closures for tasks that could interfere with mainline traffic or create safety hazards. Temporary nighttime lane closures and/or detours will be required for activities such as placing and removing temporary concrete barriers to separate construction work areas and traffic. Advance notice will be provided of ramp closures and traffic will be detoured to the adjacent interchanges for these periods. To maintain traffic on Highway 101 and local streets, construction activities requiring traffic lane or ramp closures will not be permitted at adjacent interchanges of Highway 101 at the same time. Retaining walls will be constructed with the associated widening work in each stage, and sound walls will be constructed as early in each stage as practicable to help mitigate construction noise. At some locations, sound walls will be located on top of retaining walls and cannot be constructed until the retaining wall is in place.
Traffic and Transportation	3.16.2	Construction staging plans will be developed to minimize impacts to existing roadways. Contractors will be required to coordinate activities with commute schedules to minimize impacts to highway traffic in the corridor. Closure of one or more lanes for construction activities will be limited to late night and weekend hours when traffic is at a minimum. Construction crews will follow established safety practices, including using flaggers, to protect work crews in the construction zone. Provisions will be incorporated into the construction contracts to designate areas for construction worker parking and to avoid parking impacts to residential or business areas. Construction haul routes will utilize Highway 101 during non-peak hours to the greatest extent practicable to avoid traffic impacts to residential or business areas.

Table S-3: Summary of Proposed Environmental Commitments

Environmental Category	EA/EIR Section	Environmental Commitments
Air Quality	3.16.11	Control measures, such as the following, would be implemented to minimize construction emissions: • All active construction areas shall be watered at least twice daily. • All trucks hauling soil, sand, and other loose materials shall be covered and shall maintain at least two feet of freeboard. • All unpaved access roads, parking areas, and staging areas at the construction site shall be watered at least three times daily or shall be applied with non-toxic soil stabilizers. • All paved access roads, parking areas, and staging areas at the construction site shall be swept daily with water sweepers. • Streets shall be swept daily with water sweepers if visible soil material is carried onto adjacent public streets. • Non-toxic soil stabilizers shall be applied to inactive construction areas (previously graded areas that are inactive for ten days or more). • Exposed stockpiles of dirt, sand, or debris shall be enclosed, covered, watered at least twice daily, or applied with non-toxic soil binders. • Traffic speeds on unpaved roads shall be limited to 15 miles per hour. • Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways. • Operations on any unpaved surfaces shall be suspended during “Spare the Air” days. • Vegetation in disturbed areas shall be replanted as quickly as possible. • Tires or tracks of all trucks and equipment leaving the site shall be washed. • Excavation and grading activities shall be suspended when winds exceed 25 miles per hour. • Diesel particulate filters and other suitable controls shall be used to reduce emissions of diesel particulate matter and other air pollutants. • Visible emissions from all heavy duty off-road diesel equipment shall not exceed 20 percent opacity for more than three minutes in any hour of operation. • Construction-related trips of workers and equipment, including trucks and heavy equipment, shall be minimized. An activity schedule shall be designed to minimize traffic congestion around the construction site. • Construction equipment shall be model 1996 or newer. Fuel shall be low sulfur. • Periodic, unscheduled inspections shall be employed to ensure that construction equipment is properly maintained at all times, tuned to manufacturer’s specifications, and not modified to increase horsepower, except in accord with established specifications. • A construction schedule shall be specified to minimize cumulative impacts from multiple development and construction projects in the area. • Construction equipment and staging zones shall be located away from sensitive receptors such as children and the elderly, as well as away from fresh air intakes to buildings and air conditioners. Equipment idling shall be minimized. • Construction equipment shall use cool exhaust gas recirculation.